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paper, we present the solutions of the Dirac-Weyl equation for graphene under a ant magnetic field. The resulting spectrum is used to determine the partition on, a key quantity in the study of thermodynamic properties. From this function, alyze the mean energy, specific heat, entropy, and free energy in two different wo...

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paper, we present the solutions of the Schrödinger equation and the odynamic properties of generalized hyperbolic Hulthen and Woods-Saxon tial. The eigenvalues and eigenfunctions were found using the parametric rov-Uvarov method (PNUM). The clean energies of the molecules HCl, NiC, CO, , LiH, CuLi and CrH are calculate...

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2 , LiH, CuLi and CrH are calcul...

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paper, we study coherent states for a quantum Pauli model through
symmetric quantum mechanics (SUSYQM) method. From the point of view of
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ntly, we have determined the spectrum and the wave functions of the Hamiltonian
andau particle with time-dependent mass and frequency undergoing the
nce of a uniform time-dependent electric field[J. Math. Phys. 56, 072104 (2018)].
present paper we extend the study of this model that we name the time-
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дно- и двухфотонных моделей Джейнса-Каммингса в керровской среде
ставлен метод точного аналитического построения их спектров, основанный
ндаментальных принципах квантовой механики. Сначала для получения

ставления о методе с использованием суперсимметричной квантовой ники рассматривается первая обобщенная модель Джейнса-Камминг...

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l on fundamental principles of quantum mechanics, we present a method for a us analytic construction of the spectra of the one- and two-photon Jaynes- nings models in a Kerr medium. To obtain an idea of the method, we consider a eneralized Jaynes-Cummings model with a real, linear superpotential using iques of supersymmetric...

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udy the relativistic dynamics of a particle carrying a non-Abelian charge in the nce of a non-Abelian background electromagnetic field. To this end, we extract on-Abelian Dirac Hamiltonian from a system describing the interaction between ang–Mills field and a spin-1/2 field. The dynamics of a particle with non-Abelian e is...

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ользованием основных методов квантовой механики разработан тический формализм нахождения спектров многофотонных гамильтонианов нса-Каммингса и обобщенных гамильтонианов Дикке. В рамках агаемого подхода гамильтонианы этих моделей расщепляются на два тора, которые представляют собой константы движения. Затем для ения полн...

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evelop an analytic formalism using basic quantum mechanics techniques to ssfully solve the multiphoton Jaynes–Cummings and the generalized Dicke tonians. For this, we split the Hamiltonians of these models into two operators

ave the properties of constants of motion for these systems. We then use some nown operator propert...

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pectrum of a Hamiltonian describing the dynamics of a Landau particle with time-ndent mass and frequency undergoing the influence of a uniform time-dependent ic field is obtained. The configuration space wave function of the model is ssed in terms of the generalised Laguerre polynomials. To diagonalize the time-ndent Hamilto...

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мулирован биортогональный формализм для неэрмитовых многомодовой и
фотонной моделей Джейнса-Каммингса. Определены суперсимметричные
аторы данных моделей, которые особенно удобны при диагонализации
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evelop a biorthogonal formalism for non-Hermitian multimode and multiphoton
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are especially convenient for diagonalizing the Hamiltonians. The Hamiltonian
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ıain aim in this work is to find out the exact formula of the equilibrium free energy cold atom subjected to a harmonic potential in the background of an artificial non- ın uniform magnetic field and linearly coupled to a heat bath. The heat bath sts of a collection of independent quantum harmonic oscillators, while its cti...

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erive the quantum Langevin equation (QLE) for a harmonically single trapped ıtom subjected to artificial non-Abelian gauge potentials and linearly coupled to a bath. The independent-oscillator (IO) and the momentum-momenta coupling ls are studied. In each case, the non-Abelian effect on the QLE is pointed out for) gauge tran...

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paper, we use some well-known techniques of Supersymmetric tumMechanics (SUSYQM) namely the factorization method and shape ance, to generate new analytically solvable potentials from some interacting onic models in nonrelativistic limits. These systems are described by the ordinary ıe harmonically trapped Schrödinger-Pau...

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the action of marine currents, non-cohesive sediments evolve by bed-load, by on or suspension depending on their granulometry. Several authors have dered that the movement of sediment is bidimensional and modelized the effects ell by a constant velocitynear the seabed. Here we have studied the velocity of fluctuating...

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etermine the analytical solution for a Hamiltonian describing a confined charged le in a quantum dot, including Rashba spin-orbit coupling and Zeeman splitting . The approach followed in this paper is straightforward and uses the etrization of the wave functions components. The eigenvalue problem for the tonian in Bargmanns...

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paper we study the stationary scattering problem of the Aharonov-Bohm (AB) . To achieve this goal we construct a Hamiltonian from the most general sentations of the Heisenberg algebra. Such representations are defined on a non-y-connected manifold which we set as the flat circular annulus. By means of the eumann's self-...

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illustration, a specific gauge is fixed, enabling canonical quantization and the of t...

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aper is concerned with the rigorous analytical determination of the spectrum of o-photon and the two-mode quantum Rabi models. To reach this goal, we exploit dden symmetries in these models by means of the unitary and similarity ormations in addition to the Bargmann-Fock space description. In each case, the quantum me...

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scuss spectral and resonance properties of exactly solvable Dirac Hamiltonians sponding to a surface δ and δ′ interactions. First, we study spectral properties for ere and δ′-sphere models. Next, we analyze the resonance phenomena for the models with specific boundary conditions. © 2001 American Institute of Physics.

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e model formally expressed as H{R} = HD+∑m = 1Nαmδ(|x|−Rm); x ∈ 3,αm ∈ , , we give a precise mathematical definition, provide basic properties and main ring elements. © 2000 American Institute of Physics.

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troduce and develop a systematic theory of δ′-sphere interactions formally given Hamiltonian H{R} = HD+Σm = 1Nmδ′(||−Rm); m ∈ , ∈ 3,Rm>0,1 ⩽ m ⩽ N with lary conditions of the second type, as a logical continuation of the work med [J. Math. Phys. 40, 4255 (1999)]. First, we give the mathematical definition model, self-ad...

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udy stationary relativistic scattering theory for a δ-sphere interaction formally by the Hamiltonian H = HD+αδ(||−R), ∈ 3, α ∈ , R>0 with the boundary conditions ond type. First we give the mathematical definition of the model, self-adjointness Hamiltonian, indicial equation, stationary scattering theory and the spectral pro...

tically solvable models of relativistic δ ' -sphere interactions with first type dary conditions

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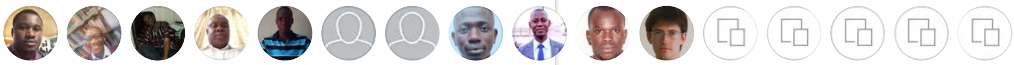

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